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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/885,383	06/20/2001	Mark James Schaenzer	SEA9620.01/30874.112USU1	3979

7590 12/29/2003

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EXAMINER
RODRIGUEZ, GLENDA P

ART UNIT	PAPER NUMBER
2651	10

DATE MAILED: 12/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/885,383	SCHAENZER ET AL.	
	Examiner	Art Unit	
	Glenda P. Rodriguez	2651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10,12-14 and 16-21* is/are rejected.

7)☒ Claim(s) *11 and 15* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dietzel et al. (US Patent No. 6, 292, 316) in view of Bucska (US Patent No. 5, 790, 332).

Regarding Claim 1, Dietzel et al. teach a method of detecting a disc defect comprising the steps of:

> Writing a first data track to the disc with a write head including a write element and a thermal asperity detector (Pat. No. 6, 292, 316; Col. 1, Lines 26-52 and Col. 4, Lines 17-19. Dietzel et al. teach the use of an MFM that detects read errors due to thermal asperities, for example.);
>
> Detecting magnetic defects on the data track (Pat. No. 6, 292, 316; Col. 1, Lines 26-52 and Col. 4, Lines 17-19. Dietzel et al. teach the use of an MFM that detects read errors due to thermal asperities, for example.);

> Scanning the first data track for thermal asperities with the thermal asperity detector (Pat. No. 6, 292, 316; Col. 4, Lines 7-16. In order to find if the sector has any thermal asperity, it must first be scanned.).

Dietzel et al. fail to teach wherein the medium uses a writing head and a certified head. However, this feature is well known in the art as disclosed by Bucska, wherein it teaches a writing head used to write tracks in the disk (Pat. No. 5, 790, 332; Col. 2, Lines 51-62). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Dietzel et al.'s invention in order to provide two heads in order to optimize the recording of information (Pat. No. 5, 790, 332; Col. 3, Lines 60-62).

Regarding Claim 4, Dietzel et al. teach a method of detecting magnetic and thermal asperities on a disc comprising the steps of:

> Writing a first data stream to a first wide track on the disc with a write head located on a write head (Pat. No. 6, 292, 316; Col. 1, Lines 26-52 and Col. 4, Lines 17-19. Dietzel et al. teach the use of an MFM that detects read errors due to thermal asperities, for example.);
>
> Reading the first data stream on a first portion of the first wide track for magnetic defects with a read element (Pat. No. 6, 292, 316; Col. 1, Lines 26-52 and Col. 4, Lines 17-19.

Dietzel et al. teach the use of an MFM that detects read errors due to thermal asperities, for example.);

Scanning the first wide track for thermal asperities with a thermal asperity detector located on the write head ((Pat. No. 6, 292, 316; Col. 4, Lines 7-16. In order to find if the sector has any thermal asperity, it must first be scanned.).

Dietzel et al. fail to teach wherein the medium uses a writing head and a certified head. However, this feature is well known in the art as disclosed by Bucska, wherein it teaches a writing head used to write tracks in the disk (Pat. 5, 790, 332; Col. 2, Lines 51-62). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Dietzel et al.'s invention in order to provide two heads in order to optimize the recording of information (Pat. 5, 790, 332; Col. 3, Lines 60-62).

Regarding Claims 2 and 5, Dietzel et al. and Bucska disclose all the limitations of Claims 1 and 4, repectively. Dietzel et al. uses a disk and it is inherent that a disk has a plurality of tracks, therefore permitting the thermal asperity detector can detect for a plurality of tracks.

Regarding Claims 3 and 6, Dietzel et al. and Bucska disclose all the limitations of Claim 4. Dietzel et al. includes the step of upon locating a thermal asperity during the step of scanning, writing a burst pattern to the disc in a location where a thermal asperity is detected wherein the burst pattern is detectable in further analysis of the disc

(Pat. No. 6, 519, 715; Col. 15, Lines 8 – 20, Lines 39 – 64. Dietzel et al. teach writing a bit for designating the track that contains the thermal asperity).

Regarding Claim 7, Dietzel et al. disclose all the limitations of Claim 4. It is inherent that when the medium is reading (or for example track seeking, which is another way of scanning or reading throughout a disk) no writing is being performed.

Regarding Claim 8, Dietzel et al. teach a testing system comprising:

> Disk drive having a spindle on which a disc mounted and motor for rotating the disc (Pat. No. 6, 292, 316; Col. 3, Lines 30-33);
>
> A write head including a write element and a thermal asperity detector for writing a first data track to a disk (Pat. No. 6, 292, 316; Col. 1, Lines 26-52 and Col. 4, Lines 17-19. Dietzel et al. teach the use of an MFM that detects read errors due to thermal asperities, for example.);
>
> Wherein the thermal asperity detector simultaneously scans the first data track for thermal asperities while the certification head defects for magnetic defects ((Pat. No. 6, 292, 316; Col. 4, Lines 7-16. In order to find if the sector has any thermal asperity, it must first be scanned.).

Dietzel et al. fail to teach wherein the medium uses a writing head and a certified head. However, this feature is well known in the art as disclosed by Bucska, wherein it teaches a writing head used to write tracks in the disk (Pat. 5, 790, 332; Col. 2, Lines 51-62). Bucska further teaches that a writing head in which write a data track and then reads the written track (Pat. No. 5, 790, 332; Col. 3, Line 55 to Col. 4, Line 60). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Dietzel et al.'s invention in order to provide two heads in order to optimize the recording of information (Pat. 5, 790, 332; Col. 3, Lines 60-62).

Regarding Claims 13 and 14, DIetzel et al. teach a write head that is activated during a first period (It is obvious that a writing operation takes place throughout a predetermined period.), a thermal detector included in the write head (Pat. No. 6, 292, 316; Col. 1, Lines 26-52 and Col. 4, Lines 17-19. It is obvious that any type of operation takes a predetermined amount of time.) and a read head (Pat. No. 6, 292, 316; Col. 3, Lines 29-32. Dietzel et al. teach a reading element. It is obvious that the read element scans through written data.). Dietzel et al. fail to disclose that the write head and read head are in separate support arms. It would have been obvious to a person of ordinary skill in the art, to know that the write and read head perform their operations in different period, therefore not necessarily needing to have both read and write elements in separate support arms. It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Dietzel et al.'s invention, in order for the medium to have separate arms in order for the medium to perform the operation or reading or writing.

Claims 12 and 17 arerejected under 35 U.S.C. 103(a) as being unpatentable over Dietzel et al. and Bucska as applied to claim 8 above, and further in view of Smith (U.S. Pat. No. 6, 154, 335).

Regarding Claim 12, Dietzel et al. and Bucska disclose all the limitations of Claim 8. Dietzel et al. and Bucska fail to teach wherein the thermal asperity detector has a width ranging from about 10 microns to 100 microns. However, this feature is well known in the art as disclosed by Smith et al., wherein it teach a width ranging in the thermal asperity detector (U.S. Pat. No. 6, 154, 335; Col. 9, Lines 55-57). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Dietzel et al. and Bucska's invention in order for the medium to be able to have that certain width because it can better perceive the thermal asperities.

Regarding Claim 17, Dietzel et al. and Bucska disclose all the limitations of Claim 14. Dietzel et al. and Bucska fail to teach wherein the thermal asperity detector has a width ranging from about 10 microns to 100 microns. However, this feature is well known in the art as disclosed by Smith et al., wherein it teach a width ranging in the thermal asperity detector (U.S. Pat. No. 6, 154, 335; Col. 9, Lines 55-57). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Dietzel et al. and Bucska's invention in order for the medium to be able to have that certain width because it can better perceive the thermal asperities.

Claim 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dietzel et al. and Bucska as applied to claim 8 above, and further in view of Gill (U.S. Pat. No. 5, 909, 344).

Regarding Claim 9, Dietzel et al. and Bucska disclose all the limitations of Claim 8. Dietzel et al. and Bucska fail to disclose that the thermal detector is composed of a magnetic material. However, this feature is known in the art as disclosed by Gill, wherein it discloses a magneto resistive head that contains nickel in its sensing element, which is a magnetic element (Pat. No. 5, 909, 344; Col. 1, Line 57 to Col. 2, Line 2). It would have been obvious to a person of ordinary skill in the art to modify Dietzel et al. and Bucska's invention in order for the medium to be made of a magnetic element because the element is able to detect thermal defect or asperities.

Regarding Claim 10, Dietzel et al. and Bucska teach all the limitations of Claim 8. Dietzel et al. and Bucska fail to teach that the thermal detector is made of nickel. However, this feature is known in the art as disclosed by Gill, wherein it discloses a magneto resistive head that contains nickel in its sensing element (Pat. No. 5, 909, 344; Col. 1, Line 57 to Col. 2, Line 2). It would have been obvious to a person of ordinary skill in the art to modify Dietzel et al. and Bucska's invention in order for the medium to be made of nickel because the element is able to detect thermal defect or asperities.

Claims 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dietzel et al. and Bucska as applied to Claim 8 and 14 above, and further in view of Gill (U.S. Pat. No. 5, 909, 344).

Regarding Claim 16, Dietzel et al. and Bucska disclose all the limitations of Claim 14. Dietzel et al. and Bucska fail to teach that the thermal detector is made of nickel. However, this feature is known in the art as disclosed by Gill, wherein it discloses a magneto resistive head that contains nickel iron in its sensing element (Pat. No. 5, 909,

344; Col. 1, Line 57 to Col. 2, Line 2). It would have been obvious to a person of ordinary skill in the art to modify Dietzel et al. and Bucska's invention in order for the medium to be made of nickel because the element is able to detect thermal defect or asperities.

Regarding Claim 18, Dietzel et al. and Bucska disclose all the limitations of Claim 14. Dietzel et al. and Bucska fail to teach that the thermal detector is made of nickel. However, this feature is known in the art as disclosed by Gill, wherein it discloses a magneto resistive head that contains nickel in its sensing element (Pat. No. 5, 909, 344; Col. 1, Line 57 to Col. 2, Line 2). It would have been obvious to a person of ordinary skill in the art to modify Dietzel et al. and Bucska's invention in order for the medium to be made of nickel because the element is able to detect thermal defect or asperities.

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dietzel et al. and Bucska as applied to Claim 14 above, and further in view of Spainger (U. S. Pat. No. 5, 122, 917). Dietzel et al. disclose all the limitations of Claim 14. Dietzel et al. fail to teach that the medium's write head has a width of 20 to 100 microns. However, this feature is well known in the art as disclosed by Spainger, wherein it discloses that the write head width has a width of 24 microns (Pat. No. 5, 122, 917; Col. 8, Line 20-21). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Dietzel's invention in order for the medium to have a determined width in order for the medium to perform its job more effectively.

Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dietzel et al. (US Patent No. 6, 519, 715) in view of Bucska (US Patent No. 5, 790, 332).

Regarding Claim 20, Dietzel et al. and Bucska teach all the limitations of Claim 17. Dietzel et al. and Bucska fail to teach wherein the width of the write head is about 75 microns. One of ordinary skill in the art would have been motivated to have had about 75 microns since such ranges, absent any critically (i. e., unobvious and/or unexpected result(s)), are generally achievable through routine optimization/experimentation, and since discovering the optimum or workable ranges, where the general conditions of a claim are disclosed in the prior art, involves only routine skill in the art, *In re Aller*, 105 USPQ 233 (CCPA 1955). Moreover, in the absence of any critically (i. e., unobvious and/or unexpected result(s)), the parameters set forth would have been obvious to a person of ordinary skill in the art at the time the invention was made, *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Regarding Claim 21, Dietzel et al. and Bucska teach all the limitations of Claim 14. Dietzel et al. and Bucska fail to teach wherein the write element has a first width and the read element has a second width is from 2 to 11. One of ordinary skill in the art would have been motivated to have had about 75 microns since such ranges, absent any critically (i. e., unobvious and/or unexpected result(s)), are generally achievable through routine optimization/experimentation, and since discovering the optimum or workable ranges, where the general conditions of a claim are disclosed in the prior art,

involves only routine skill in the art, *In re Aller*, 105 USPQ 233 (CCPA 1955). Moreover, in the absence of any critically (i. e., unobvious and/or unexpected result(s)), the parameters set forth would have been obvious to a person of ordinary skill in the art at the time the invention was made, *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Allowable Subject Matter

Claims 11 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Gerrard et al. (WO 01/22410), Yong (US Patent No. 6, 628, 465), Moraru et al. (US Patent No. 5, 333, 140), Mori (US Patent No. 5, 423, 111), Stokes et al. (US Patent No. 6, 578, 164) and Widney (US Patent No. 5, 115, 358).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenda P. Rodriguez whose telephone number is (703)305-8411. The examiner can normally be reached on Monday thru Thursday: 7:00-5:00; alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on (703)308-4825. The fax phone number for the organization where this application or proceeding is assigned is (703)308-6743.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-9000.

gpr
December 10, 2003.

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